WHAT IS CLAIMED IS:

1. A method for controlling a process for generating hydrogen by reforming a hydrocarbon-containing feed at elevated temperature in the presence of water to produce a reformate containing at least about 3 volume percent carbon monoxide (dry basis), reducing the carbon monoxide content of the reformate to provide a purified hydrogen product having less than about 100 parts per million by volume of carbon monoxide (dry basis), maintaining a reservoir of hydrogen from reforming, and withdrawing hydrogen from the reservoir comprising:
    a) generating hydrogen at a rate within a first rate range sufficient to accumulate hydrogen in the reservoir,
    b) upon a predetermined first amount of hydrogen being accumulated in the reservoir, changing the rate of hydrogen generation to a rate within a second rate range insufficient to maintain the first amount of hydrogen in the reservoir, and
    c) upon a predetermined second amount of hydrogen being in the reservoir, said second amount being less than the first amount, changing the rate of hydrogen generation to a rate within said first rate range.
2. The method of claim 1 wherein the hydrogen maintained in the reservoir is purified hydrogen product and is withdrawn from the reservoir at different rates during over time.
3. The method of claim 2 wherein hydrogen is withdrawn from the reservoir at varying rates for generating electricity in a fuel cell.
4. The method of claim 3 wherein hydrogen is withdrawn from the reservoir on an episodic basis for other purposes, and the capacity of the reservoir is sufficient to supply hydrogen to meet peak demands.
5. The method of claim 2 wherein a transition period exists during the changing of the rate of hydrogen generation from the first rate to the second rate, and the capacity of the reservoir is less than 2 times that equivalent to the incremental amount of purified hydrogen product that would have been produced during the transition period at the second rate less that which would have been produced during the transition period at the first rate.
6. The method of claim 4 wherein the capacity is less than that equivalent to said incremental amount.

7. A method for controlling a combined process for generating hydrogen and using hydrogen for generating electrical power by reforming a hydrocarbon-containing feed at elevated temperature in the presence of water to produce a reformate containing at least about 3 volume percent carbon monoxide (dry basis), providing the reformate at a pressure and temperature suitable for pressure swing adsorption to obtain a purified hydrogen stream, recovering hydrogen from the reformate by pressure swing adsorption to provide a purified hydrogen product stream containing at least 98 volume percent hydrogen and less than about 100 parts per million by volume of carbon monoxide (dry basis) at least a portion of which purified hydrogen product stream is used to generate electrical power by reaction with oxygen in a fuel cell and to provide a purge stream containing hydrogen and carbon monoxide at least a portion of which purge stream is combusted to provide heat for the reforming, and maintaining a reservoir of the purified hydrogen product stream comprising:
    a) generating hydrogen at a first rate within a first rate range sufficient to accumulate purified hydrogen stream in the reservoir,
    b) upon a predetermined first amount of purified hydrogen stream being accumulated in the reservoir, changing the rate of hydrogen generation to a second rate within a second rate range insufficient to maintain the first amount of purified hydrogen stream in the reservoir, and
    c) upon a predetermined second amount of purified hydrogen stream being in the reservoir, said second amount being less than the first amount, changing the rate of hydrogen generation to a rate said first rate range.
8. The method of claim 7 wherein the reformate is subjected to carbon monoxide-reducing conditions prior to the pressure swing adsorption.
9. The method of claim 8 wherein hydrogen is withdrawn from the reservoir on an episodic basis for other purposes, and the capacity of the reservoir is sufficient to supply hydrogen to meet peak demands.
10. The method of claim 7 wherein the second rate of hydrogen generation is nil.
11. The method of claim 7 wherein the second rate of hydrogen generation is at least about 20 percent of the first rate of hydrogen generation.

12. The method of claim 11 wherein the reforming is maintained within a predetermined temperature range at the first rate of hydrogen generation and at the second rate of hydrogen generation by adjusting the amount of combustion providing heat for reforming.
13. The method of claim 12 wherein the combustion comprises the combustion of the purge stream and combustion of hydrocarbon-containing feed.
14. The method of claim 13 wherein the reforming is steam reforming and the combustion provides heat through indirect heat exchange.
15. The method of claim 13 wherein the reforming comprises a partial oxidation of hydrocarbon-containing feed fed to the reforming and oxygen-containing gas is also fed to the reforming.
16. The method of claim 15 wherein the reforming is an autothermal reforming.
17. The method of claim 15 wherein the volume ratio of hydrocarbon-containing feed to oxygen-containing gas is adjusted to maintain the reforming within the predetermine temperature range.
18. The method of claim 17 wherein the rate of hydrocarbon-containing feed to the reforming is the primary variable changed when changing the rate of hydrogen generation and the rate of oxygen-containing gas is adjusted to maintain the reformer within the predetermined temperature range, and the rate of production of purified hydrogen product stream is that produced at the given hydrocarbon-containing feed rate.
19. The method of claim 7 wherein the combustion of the purge is used to preheat the hydrocarbon-containing feed for the reforming.
20. The method of claim 7 wherein the reforming comprises a partial oxidation of hydrocarbon-containing feed fed to the reforming and oxygen-containing gas is also fed to the reforming, and the combustion of the purge is used to preheat the oxygen-containing gas for the reforming.
21. The method of claim 7 wherein the rate of hydrocarbon-containing feed to the reforming is the primary variable changed when changing the rate of hydrogen generation and the rate of hydrocarbon-containing fuel for the combustion is adjusted to maintain the reformer within the predetermined temperature range, and the rate of production of purified hydrogen stream is that produced at the given hydrocarbon-containing feed rate.

22. The method of claim 7 wherein the reformate is provided at a pressure suitable for pressure swing adsorption by compressing the hydrocarbon-containing feed for reforming.
23. The method of claim 7 wherein the reformate is provided at a pressure suitable for pressure swing adsorption by compressing the hydrocarbon-containing feed and the oxygen-containing gas for reforming.
24. A process for generating hydrogen comprising reforming a hydrocarbon-containing feed at elevated temperature in the presence of water and nitrogen and oxygen-containing gas whereby a portion of the feed is partially combusted to provide heat for reforming to produce a reformate containing water, hydrogen, nitrogen, carbon dioxide and at least about 3 volume percent (dry basis) carbon monoxide, providing the reformate at a pressure and temperature suitable for pressure swing adsorption to obtain a purified hydrogen stream, recovering from the reformate during an adsorption cycle of a pressure swing adsorber hydrogen a purified hydrogen product stream containing at least 98 volume percent hydrogen and less than about 100 parts per million by volume of carbon monoxide (dry basis) and provide during a purge cycle a purge stream containing nitrogen, carbon dioxide, hydrogen and carbon monoxide at least a portion of which purge stream is combusted to provide heat for the reforming, in which the rate of hydrogen production is changed from a first rate to a second rate and a substantially constant pressure swing cycle time is maintained for the adsorption at each such rate and the purity of the purified hydrogen stream varies.
25. The process of claim 24 wherein the reformate is subjected to carbon monoxide-reducing conditions prior to the pressure swing adsorption.
26. The process of claim 25 wherein the carbon monoxide-reducing conditions comprise subjecting the reformate to water gas shift conditions including the presence of a water gas shift catalyst and in the presence of water to react carbon monoxide with water to produce a shift effluent containing at least about 0.1 volume percent carbon monoxide (dry basis), cooling the shift effluent to a temperature below about 100°C and removing therefrom condensed water.
27. The process of claim 24 wherein a reservoir of hydrogen generated by the reforming is maintained.

28. The process of claim 24 wherein a purge gas is used during the purge cycle of the pressure swing adsorber, said adsorber having at least four cycling beds such that at least one of which is undertaking adsorption, another of which is being purged, another of which is being repressurized and another of which is providing purge gas to the bed being purged.
29. The process of claim 28 wherein the bed being repressurized comprises a reservoir for hydrogen from the reforming.